REMARKS

Responsive to the final Office Action mailed 06 May 2009 and with an extension of time of THREE MONTHS, the present paper is timely filed contemporaneously with a Request for Continuing Examination under 37 C.F.R. § 1.114 on or before 06 November 2009.

The present paper will serve as the Submission required by 37 C.F.R. § 1.114(c).

By the present paper, claims 1 - 3 are amended, claim 4 is cancelled without prejudice, and new claims 5, 6, and 7 are presented.

Entry of the Request for Continuing Examination, entry of the claim amendments, entry of the new claims, reconsideration of the Application are respectfully requested.

The Claim Amendments:

Claim 1 is amended to point-out with even greater particularity that which Applicants consider as their invention by making even more clear that the mixer mixes liquids and has a pressure reducing valve upstream of the diaphragm, the diaphragm in turn upstream of the mixing point. Support for the amendment can be found at least in the figures and at page 14, line 190, to page 16, line 3.

Claims 2 and 3 are amended to make them consistent with claim 1 from which they depend.

Applicants respectfully submit that te amendments do not introduce new matter.

The New Claims:

New claims 5, 6, and 7 define the invention in alternative language conforming even better to United States patent practice and positively recite the fluctuation dampening function of the arrangement of elements, inherent in the novel arrangement, and expressly supported in the specification at, for example, page 9, line 28, to page 10, line 2.

Applicants respectfully submit that the claim amendments do not introduce new matter into the specification.

Claim Rejections Under 35 USC § 102:

Claim 1 was rejected as allegedly anticipated by Lubitzsch et al., US 4,219,038 (the '038 patent). For reasons give below, Applicants respectfully traverse.

To anticipate, each and every element of the claimed invention must be identically disclosed in the prior art reference and the elements must be arranged as required by the claim. The allegedly anticipating reference must show the invention in as complete detail as contained in the claim. M.P.E.P. § 2131. *See also In re Bond*, 910 F.2d 831, 15 USPQ2d 1566, 1567 (Fed. Cir 1990).

The '038 patent discloses two supply lines ([1] and [2]) for gases. Each supply line has a pressure reducing valve [5, 6] and a regulating valve [7, 8]. The supply lines meet at a mixing line [12]. But the '038 patent does not teach that the mixing line has a back pressure valve that modulates pressure fluctuations. A valve for controlling one pressure regulator is not a back pressure valve, as that term would be understood by one skilled in the art in light of Applicants' specification, and would not produce the modulating or attenuating effect of Applicants' invention.

At column 5, beginning at line 1, the '038 patent recites:

> By maintaining an equal pressure difference at the same pressure value,

> regulating valves 7 and 8 ensure a constant rate of flow of the component gases corresponding to the adjusted mixture. This is because the pressures, namely, the output pressure of pressure regulators 5 and 6, and the input pressure of admission-pressure regulator 13, are kept constant. Should the output pressure of admission-pressure regulator 13 change in a manner such that admission-pressure regulator 13 can no longer perform its controlling function, i.e., it no longer keeps the input pressure constant, then pressure switch 18 switches over so that the pressure regulators 5 and 6 are closed by the on-off valve 16.

Accordingly, if the output and input pressures of the gasses are not kept constant, or if the pressures in the component lines drop below the minimum pressure at which the regulators can continue to regulate output pressure, a balanced mixing ratio or constant volume can no longer be realized and the gas supply is cut-off.

On the other hand, Applicants' inventive device is arranged for mixing of relatively incompressible liquids, fed by a pumping pressure, to a mixing point. Pressure on the upstream side of the mixing point is regulated with reducing valves and a diaphragm and a back pressure valve in the mixing line to insulate pressure fluctuations at points upstream and downstream of the mixing point from each other.

Accordingly, it cannot be said the elements disclosed in the in the '038 patent are identically arranged as required by Applicants claim1. Accordingly, Applicants respectfully submit that the rejection is improper and should be withdrawn.

Claim Rejections Under 35 U.S.C. § 103:

Claims 2, 3, and 4 were rejected as allegedly obvious over the '038 patent in view of Henry Walker Bartlett, Jr., US 6,280,692 (the '692 patent). Cancellation of claim 4 moots that rejection. For reasons given

below, Applicants respectfully traverse the rejection of other claims.

An obviousness analysis must consider the claimed invention as a whole. M.P.E.P. § 2141.02(I). Similarly, a prior art reference must be considered for all that it teaches, including disclosures that would militate against a proposed modification of combination. M.P.E.P. § 2143.02 (VI) . A proposed modification cannot change the principal of operation of a prior art device, or render it unsuitable for its express purpose. M.P.E.P. § 2143.01(VI).

Claim Construction: To disclose an element, the prior art need not describe the claim element in exactly the same words used in a claim. But it is equally true that coincidental use of the same word by a different drafter in a prior art patent to describe a similar but not identical element is not *per se* disclosure of that element. All regulations "regulate" something. But not all elements that might be called "regulators" are fungible.

Both specifications use the terms, "regulate" and "regulator." However, the meaning and object of the "regulation" thereof is completely different, and therefore, naturally, the outcome and effects brought about also differ essentially.

The current application uses a back pressure valve to control the pressure on the upstream side of the merge point, thereby enabling stable mixture of liquids and regulation of the mixture ratio during supply while at the same time supplying liquids continuously and stably.

The 038 patent uses pressure data information to close the pressure regulators 5 and 6 via a control pipe and pressure switch and stop gas supply, in order to prevent formation of a mixture gas having mixture ratio other than preset ones.

The Prior Art: At column 4, beginning at line 40, the '038 patent recites:

> Regulating valves 7 and 8 are provided for adjusting the mixing ratio, and the two supply lines 1 and 2 unite at a juncture 11 in a common gas mixture line 12 which has an extension 21 downstream of a pressure regulator 13 which leads to the point of consumption.
>
> In accordance with the invention, the gas mixture line 12 is provided with an admission-pressure regulator 13 by which the gas pressure in the component lines 1 and 2 downstream of regulating valves 7 and 8 is kept equal and constant. After admission-pressure regulator 13, gas mixture line 21 is enlarged to a mixing section which is designed as a storage tank 17. Upstream of their junction 11, each component line 1 and 2 is equipped with a check valve 9 and 10, respectively.

As clear from this description, first of all, the admission-pressure regulator 13 of the 038 patent merely has a function such that the upstream side gas pressure of the admission-pressure regulator 13 is kept constant, thereby keeping the component gas pressures of the gas line 1 and gas line 2 on the downstream of the regulator valves 7 and 8 to be equivalent and constant, and there is neither object nor function of controlling the gas pressure on the downstream side of the admission-pressure regulator 13 by itself.

Furthermore, at column 5, beginning at line 1, the '038 patent further recites:

> By maintaining an equal pressure difference at the same pressure value, regulating valves 7 and 8 ensure a constant rate of flow of the component gases corresponding to the adjusted mixture. This is because the pressures, namely, the output pressure of pressure regulators 5 and

> 6, and the input pressure of admission-pressure regulator 13, are kept constant. Should the output pressure of admission-pressure regulator 13 change in a manner such that admission-pressure regulator 13 can no longer perform its controlling function, i.e., it no longer keeps the input pressure constant, then pressure switch 18 switches over so that the pressure regulators 5 and 6 are closed by the on-off valve 16.

Accordingly, admission-pressure regulator [13] of the '038 patent does not function to regulate (gas) pressure on its downstream side. Rather, that regulator is adapted so that, if control fails, regulators [5] and [6] are closed to stop flow of gases as recited in the block quote immediately above. *See also* '036 patent at column 5, lines 14 - 17.

The Present Invention: An important and distinguishing feature of the apparatus of the claims is the use of a back pressure valve in the mixing line, controlling the pressure on upstream and downstream sides. In this way, fluctuation in the pressure on the downstream side does not affect the liquid flow or fluid dynamics in the supply lines upstream of the merge point with the mixing line.

This configuration produces an effect that changing the flow rate in one supply line does not impact the fluid dynamics in the other supply line(s) and there is no deterioration in the supply in the lines. This facilitates the adjustment of liquid mixing ratio and ensures a continuous stable supply of mixed liquid by isolating the upstream side from pressure fluctuations on the downstream side. Using this configuration, simple and compact piping arrangements can be achieved.

Differences Between the Prior Art and the Claimed Invention:

The present invention conveys and mixes relatively incompressible liquids of varying densities, not gasses. The back pressure valve absorbs \ fluctuations in the down stream section, preventing these from being communicated to the upstream section.

The gasses mixed in the '038 patent are compressible. The volume and partial pressure thereof change before and after mixing due to, e.g. temperature, applied pressure, or de-mixing. In order to maintain a constant mixing ratio of the gasses, the '038 patent must continuously monitor pressure-drop on the downstream side and adjust the supply pressures of the to-be-mixed gasses on the upstream side in a feed-back control loop. This is quite different from Applicants' inventive arrangement for delivering mixed liquids in which upstream and downstream portions are isolated with respect to pressure changes.

Applicants' invention as claimed could not be easily achieved by combining the '038 and '692 patents and there would be no motivation to make the required changes, including isolating upstream and downstream sections.

Conclusion:

Based on the forgoing amendments and remarks, Applicants respectfully submit that the claims are now in condition for allowance, which allowance is earnestly solicited. If, in the opinion of the Examiner, a telephone conference would advance prosecution of the application, the Examiner is invited to telephone the undersigned attorneys.

REQUEST FOR EXTENSION OF TIME

Applicants respectfully petition for an extension of time to reply of three months the fee of $1,110.00 due therefor under 37 C.F.R. § 1.17(a)(2) is paid herewith by credit card. PTO form PTO-2038 accompanies this paper.

If there is any discrepancy between the fee(s) due and the fee payment authorized in the Credit Card Payment Form PTO-2038 or the Form PTO-2038 is missing or fee payment via the Form PTO-2038 cannot be processed, the USPTO is hereby authorized to charge any fee(s) or fee(s) deficiency or credit any excess payment to Deposit Account No. 10-1250.

Respectfully submitted,

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